

AMENDMENTS TO THE DRAWINGS

The attached sheet of drawings includes changes to page 4. This sheet, which includes FIG. 4-5, replaces the original sheet including FIG. 4-5. In FIG. 4, the element labeling the Motor has been replaced with element 110.

Attachment: Replacement Sheet

REMARKS

Claims 1-21 are pending. Claims 8-12 stand rejected under 35 USC § 101, claims 1-3, 6-10, and 13-16 stand rejected under 35 USC § 102, and claims 4-5, 11-12, and 17-21 stand rejected under 35 USC § 103. Claims 22-27 are new. Claims 4-6, 11-12, and 18 are canceled. Applicant respectfully traverses the rejections in light of the amendments and the following remarks.

Applicant requests interview

Applicant respectfully requests an interview if it would expedite disposition of the application. The undersigned attorney would welcome and encourage a telephone conference with Examiner at (512) 343-9182.

Replacement Drawing

Replacement drawings replace element 404 labeling the Motor with element 110. The changes do not add new matter and are supported by the specification at, for example, paragraph 32 (Motor 110).

Amendments to the claims and new claims

Applicant amended claims 1-2, 8-9, and 17 to describe functionality of an image sensor to clarify distinctions from the cited art. Applicant also added claims 22-25 to describe functionality of the image sensor. Support for the amendments can be found in original claims 1-7 and 13-16; and the specification at, e.g., paragraphs 28-29 and 36 (defective sensors), paragraphs 24 and 37 (reflective optics); and paragraph 27 (extra rows and columns of sensing elements). The amendments do not add new matter so Applicant respectfully requests that the amendments be entered.

Claim rejections under 35 USC § 102

Claims 1, 3, 6-10, and 13-16 stand rejected under 35 USC § 102(e) as being anticipated by Gruhlke, U.S. Patent Application No. 2005/0134712 (hereinafter referred

to as “Gruhlke”). Applicant respectfully traverses the rejections with respect to amended claims 1-3, 6-10, and 13-16 and the new claims 22-25 with the following remarks. A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single reference.¹ Furthermore, the identical invention must be shown in as complete detail as is contained in the claim.²

Independent Claims 1, 8, and 13

With regards to Gruhlke, the Office action fails to establish a prima facie case of anticipation for independent claims 1, 8, and 13 because Gruhlke fails to describe, either expressly or inherently, “each and every element as set forth in the claim”. Gruhlke fails to describe “directing light [in one collecting location] successively to the sensing elements of [a] series of sensing elements within one exposure, the directing via reflective optics.”

Gruhlke involves multiple imaging elements, such as lenses.³ These imaging elements break up light and focus it on sensors.⁴ In response, the sensors generate a signal responsive to the light.⁵ Nothing in Gruhlke indicates directing light in one collecting location successively to multiple sensing elements. Nor does Gruhlke indicate a succession of measurements during one exposure; that is, one sampling after another during a single exposure. Further, nothing in Gruhlke indicates the use of reflective optics. The imaging devices in Gruhlke may utilize refractive or diffractive components.⁶ Refractive or diffractive components are not reflective optics. Thus, Gruhlke does not describe “the identical invention [which] must be shown in as complete detail as is contained in the claim”⁷ for anticipation of claims 1.

¹ *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 U.S.P.Q.2d 1051, 1053 (Fed. Cir. 1987).

² *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 U.S.P.Q.2d 1913, 1920 (Fed. Cir. 1989).

³ Gruhlke, abstract; FIG. 2, elts. 101, 102, and 103.

⁴ Gruhlke, abstract.

⁵ Gruhlke, abstract; par. [0037].

⁶ Gruhlke, par. [0047].

⁷ *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 U.S.P.Q.2d 1913, 1920 (Fed. Cir. 1989).

Nor does Suzuki, U.S. Patent No. 6,236,430 (hereinafter referred to as "Suzuki") describe, explicitly or inherently, all the limitations of claim 1. Suzuki involves a method of taking still photographs. Incident light hits reflectors. The relationship between the light and the sensors may be changed, so that a sensor takes multiple readings during an exposure. In particular, the array may be moved in a square-like movement, so that light from a single location is detected by four adjoining sensors.

While Suzuki mentions moving incident light, it does not describe using reflective optics. Instead, it provides as examples "a glass plate or the like. More specifically, a transparent material such as a glass plate or the like having a refractive index larger than that of air."⁸ The use of transparent material is not the use of reflective optics. Thus, Suzuki does not describe "the identical invention [which] must be shown in as complete detail as is contained in the claim" for anticipation of claim 1.

Independent Claim 17

Further, neither Gruhlke nor Suzuki provide a basis for the rejection of claim 17 under §102. Gruhlke fails to describe, either expressly or inherently, "each and every element as set forth in the claim". Claim 17 provides a system including a moving logic to "move more than one of the plurality of light sensors in succession into a single collecting location to take the filtered readings." As a result, the system provides for taking a succession of measurements during one exposure. As indicated in the discussion of claims 1, 8 and 13, Gruhlke fails to describe taking a succession of measurements during one exposure.

Further, Gruhlke fails to describe "position[ing] the plurality of light sensors to align with the single collecting location a non-defective light sensor of the plurality of light sensors, the non-defective light sensor associated with the color." Nothing in Gruhlke indicates movement of the sensor array. Thus, Gruhlke does not describe "the

⁸ Suzuki, col. 10, lines 14-24.

identical invention [which] must be shown in as complete detail as is contained in the claim”⁹ for anticipation of claims 1.

Nor does Suzuki describe, explicitly or inherently, all the limitations of claim 17. Suzuki fails to describe “determining a sensing element of the more than one sensing elements is defective” and “positioning the array to align a non-defective sensing element of the more than one sensing elements with the one collecting location.” Suzuki does not, however, discuss a defective sensor. Thus, Suzuki does not discuss either detecting a defective sensor or positioning the sensor array to align a non-defective sensor with a collecting location of a defective sensor. Thus, Suzuki does not describe “the identical invention [which] must be shown in as complete detail as is contained in the claim” for anticipation of claim 1.

Claim rejections under 35 USC § 103

Applicant traverses any rejections of claims 1, 8, 13, and 17 on the basis of Gruhlke and Suzuki as follows:

To establish a prima facie case of obviousness, the modification or combination must teach or suggest all of Applicant’s claim limitations.¹⁰ In addition, there must be a suggestion or motivation to modify the references.¹¹

Independent Claims 1, 8, and 13

The reasons given above which demonstrate that neither Gruhlke nor Suzuki describe the limitations of Claims 1, 8, and 13 also demonstrate that Gruhlke and Suzuki together do not teach or suggest all of the limitations of Claims 1, 8, and 13. As stated above, neither Gruhlke nor Suzuki describes using reflective optics to redirect light onto sensors. Accordingly, Gruhlke and Suzuki do not teach or suggest all of the limitations of Claims 1, 8, and 13.

⁹ *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 U.S.P.Q.2d 1913, 1920 (Fed. Cir. 1989).

¹⁰ *In re Royka*, 490 F.2d 981, 985, 180 USPQ 580, 583 (CCPA 1974).

¹¹ *In re Vaeck*, 947 F.2d 488, 20USPQ2d 1438 (Fed. Cir. 1991).

Independent Claims 17

The reasons given above which demonstrate that neither Gruhlke nor Suzuki describe the limitations of claim 17 also demonstrate that Gruhlke and Suzuki together do not teach or suggest all of the limitations of claim 17. Neither Gruhlke nor Suzuki describes moving a plurality of sensor elements to remedy a defective sensor. Accordingly, Gruhlke and Suzuki do not teach or suggest all of the limitations of claim 17.

In addition, there is no teaching or motivation to combine the proposed remedy for a defective sensor in Gruhlke with the movable array of Suzuki. Gruhlke relies on redundant sensor elements to attempt to remedy a defective sensor. Using a similar approach to combine Gruhlke and Suzuki may produce a movable, redundant array of sensors. Under this approach, upon detection of a defective sensor, readings may be taken from another sensor at another collection location, rather than repositioning a sensor array to use a sensor at the collection location of the defective sensor.

Thus, neither Gruhlke nor Suzuki describes, explicitly or inherently, all the limitations of claims 1, 8, 13, and 17. Nor do the combination of Gruhlke and Suzuki teach or suggest all of Applicant's claim limitations in 1, 8, 13, and 17.¹² Applicant traverses the rejection of 1, 8, 13, and 17 and respectfully requests that the rejection of 1, 8, 13, and 17 be withdrawn and that 1, 8, 13, and 17 be allowed.

Dependent Claims

Claims dependent upon independent claims 1, 8, 13, and 17 incorporate the limitations of the respective independent claims. As discussed above, neither Gruhlke nor Suzuki anticipate claims 1, 8, 13, and 17. Thus, neither Gruhlke nor Suzuki describes, explicitly or inherently, all the limitations of the dependent claims. Further, the combination of Gruhlke and Suzuki fails to teach or suggest all of Applicant's claim limitations in claims 1, 8, 13, and 17. Accordingly, Applicant respectfully requests that

¹² *In re Royka*, 490 F.2d 981, 985, 180 USPQ 580, 583 (CCPA 1974).

the rejection of dependent claims 2-3, 7, 9-10, 14-17, and 19-25 be withdrawn, and that dependent claims 2-3, 7, 9-10, 14-17, and 19-25 be allowed.

In particular, neither Gruhlke nor Suzuki describes, explicitly or inherently, all the limitations of the dependent claim 24. Nor does the combination of Gruhlke and Suzuki fails to teach or suggest all of Applicant's claim limitations claim 24. Claim 24 depends upon claim 23, which in turn depends upon claim 1. Thus, the limitations of dependent claim 24 include "directing light [in one collecting location] successively to the sensing elements of [a] series of sensing elements within one exposure, the directing via reflective optics." As demonstrated above, neither Gruhlke nor Suzuki describes, explicitly or inherently, that limitation of claim 24. Nor does the combination of Gruhlke and Suzuki teach or suggest that claim limitation.

In addition, claim 24 includes the limitation of "determining a sensing element of the series of sensing elements is defective" and "redirecting light to align a non-defective sensing element of the series of sensing elements with the one collecting location, wherein the non-defective sensing element is associated with the color." As demonstrated by the discussion of independent claim 17, neither Gruhlke nor Suzuki describes, explicitly or inherently, redirecting light to a non-defective sensor when a defective sensor is detected. Gruhlke does not describe redirecting light from one sensor to another, and Suzuki does not describe detecting defective sensors. The above reasoning also shows that the combination of Gruhlke and Suzuki fails to teach or suggest redirecting light to a non-defective sensor when a defective sensor is detected.

Further, claim 24 includes the limitation of claim 23 of taking light readings with an "array [which] contains extra rows and columns of sensing elements forming an outline around the edges of the array" where "the sensing elements of the outline take fewer data readings than the sensors in the interior." As light from collecting locations is directed to successions of sensing elements in patterns such as the patterns illustrated in FIG. 3A, some of the extra sensing elements may not receive light from any collecting locations during a stage of a pattern.

Neither Gruhlke nor Suzuki describes this limitation. Neither indicates extra sensing elements on the outline of an array of sensing elements which take fewer data

readings than sensors in the interior. In Gruhlke, each sensing element generally takes one data reading during an exposure. In Suzuki, there is no indication of extra sensing elements or of a sensing element taking fewer readings during an exposure than another sensing element. Accordingly, Applicant respectfully requests that dependent claim 24 be allowed.

Claim rejections to claims 8-12

The Office action rejected claims 8-12 under 35 USC § 101 as directed to non-statutory subject matter. In this Amendment, Applicant has amended claims 8-10 in accordance with the suggestion of the Examiner. Applicant thanks Examiner for the suggestion. Applicant has cancelled claims 11-12 from further consideration in this application. Applicant believes that the claims, as amended, overcome the rejection, and respectfully requests that claims 8-10 be allowed.

CONCLUSION

Applicant respectfully traverses the claim rejections under 35 USC §§ 101, 102, and 103. Accordingly, Applicant believes that this response constitutes a complete response to each of the issues raised in the Office action. In light of the accompanying remarks, Applicant believes that the pending claims are in condition for allowance. Thus, Applicant requests that the rejections be withdrawn, pending claims be allowed, and the application advance toward issuance.

No fee is believed due with this paper. However, if any fee is determined to be required, the Office is authorized to charge Deposit Account 50-0563 for any such required fee.

Respectfully submitted,

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